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BULLETIN OF THE MASSACHUSETTS ARCHAEOLOGICAL SOCIETY



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EDITOR'S NOTE

This issue continues the *Bulletin of the Massachusetts Archaeological Society's* rich tradition of publishing original work on Native American history with a special emphasis on archaeology, presented by avocational and professional archaeologists, and historians. Susan Moore's synthesis of the Middle Woodland Fox Creek phase makes comparisons between New York State and Massachusetts. Her study is based in part on the work of William A. Ritchie, a distinguished archaeologist, who died in 1995. Russell Gardner has an intriguing theory about King Phillip's royalties, Alan Leveillee provides some insight into increasing complexities of archaeological interpretation due to enthusiasts of the New Age, and Philip Brady details Native American uses of horseshoe crabs.

As the new editor I wish especially to thank Betty Little for her many years of service in guiding the *Bulletin* as editor, and hope I can in some measure fill her shoes. I also extend my heartfelt thanks to Kathryn Fairbanks and William Moody whose continuing assistance as proofreaders is invaluable.

Shirley Blancke

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HISTORY OF THE FOX CREEK PHASE AND ITS MANIFESTATIONS IN MASSACHUSETTS

Susan Turner Moore

Introduction

An important and distinctive phase of the Middle Woodland period in the Northeast is the Fox Creek phase. The temporal range of the Fox Creek phase falls between A.D.350-700 (1600-1250 B.P.). It derives its name from Fox Creek, a stream in eastern New York State near which the type site is located. Robert Funk defined the Fox Creek culture on the basis of the key sites of Fredenburg, Westheimer, and Ford which are situated in New York's Susquehanna, Schoharie, and Hudson Valleys, respectively (Ritchie and Funk 1973:356). Other manifestations have been recognized in coastal New York (Kaeser 1968), the Delaware Valley (Cross 1941,1956), the Middle Atlantic Region (Stephenson et al. 1963), and Martha's Vineyard (Ritchie 1969). Points similar to Fox Creek points have been reported in a number of collections in Massachusetts. The history of the Fox Creek phase in New York will be discussed, and evidence of its manifestations in Massachusetts presented. Lithic assemblages, choice of lithic materials, types of site, seasonality, and chronology will be compared.

Definition of the Fox Creek Phase in New York State

Fox Creek points in New York State were described by Ritchie (1971:50-51). The Fox Creek Stemmed points are broad, heavy points of medium

to large size with wide stems and very weak shoulders. The length ranges from 1.75-3.5 in (4.45-8.9 cm), with the majority between 2-2.5 in (5.08-6.35 cm), yielding a length:width ratio of 1.25:1-2.5:1 and thus a short, wide, "stubby appearance." The bases are usually concave with occasional basal and/or stem edge smoothing. A few stemmed points have a base thinned by the removal from one side of the stem of one or more shallow vertical channel flakes. Fox Creek Lanceolate points in New York are broad, lanceolate points, of medium to large size, with slightly concave bases. Length varies from 1-3 3/16 in (2.54-8.13 cm), with the majority between 2-3 in (5.08-7.62 cm), giving a length:width ratio of 2.0:1-2.5:1. The base is slightly concave, with no smoothing but occasional thinning.

The lithic assemblage of the Fox Creek phase comprises the Fox Creek Stemmed and Lanceolate projectile points; the lanceolate Greene point; endscrapers on reworked Fox Creek points; large, straight based biface knives called Petalas blades; small ovate or oblong knives; drills on expanded square, stemmed, or trianguloid bases; sidescrapers; flake knives; small grooved pebble hammerstones; pestles; a variety of other rough stone stools; and polished adzes and celts (Funk 1976:120). A ceramic trait that is highly characteristic of the phase is net-impressed pottery, but other significant modes of ceramic decoration or surface treatment include zoned incising, dentate-stamping, rocker-stamping, incising, and cord-marking (Funk 1976:120).

Ornamental items are almost completely unknown in this culture. The Fox Creek phase

differs from most other cultures of the time in the seeming lack of pendants, pipes, bone, or antler combs, bone or antler harpoons, and the trianguloid uniface endscraper. No burials have been located (Ritchie and Funk 1973:120).

The prime diagnostics of the Fox Creek phase, the Fox Creek Stemmed and Lanceolate point types, were originally subsumed under the Steubenville Stemmed and Lanceolate types as defined by Ritchie (1961:50-52). In 1967, however, Funk created separate "Fox Creek" types because there was considerable doubt that these broad-stemmed and lanceolate points of New York and the Mid-Atlantic Coast were equivalent in morphology, or in temporal and cultural position, to the Steubenville points. Steubenvilles were first named by Mayer-Oakes (1955) in the Upper Ohio Valley, where they were assigned to the Early Archaic, or Panhandle Archaic of West Virginia (Ritchie and Funk 1973:120).

Subsequently, points of the Steubenville types were recovered from stratified contexts in New York's Hudson Valley sites of Barren Island and Dennis near Albany and Weinman on Lake George. These sites were all associated with Point Peninsula Pottery (Funk 1968). The points were also mixed with the well-established Woodland projectile point types such as Levanna, Jack's Reef Pentagonal, and Jack's Reef Corner-Notched. Therefore, Funk (1968:1) suggested an early Middle Woodland provenience for the Steubenville styles. Ritchie's (1969) discovery, in 1965, of Steubenville-like points and other styles in association with Middle Woodland pottery in the basal horizon at the Cunningham Site of Martha's Vineyard, lent credence to Funk's theory. Further investigation in 1966 and 1967 into the Susquehanna and Schoharie Valleys of Eastern New York, clarified Funk's theory of a Middle Woodland provenience for the "Steubenville-like points" (Funk 1968:3) in New York State.

Fox Creek Sites in New York State

The discovery of the Fox Creek phase at the Westheimer and Fredenburg sites climaxed a long search for definitive evidence on the cultural and temporal provenience for the so-called "Steubenville" point styles (Funk 1976:287).

The Westheimer Site is located on an alluvial plain at the confluence of the Fox Creek and the Schoharie Creek in upstate New York. Stratum 3, 2-8 in (5-20 cm) thick, yielded "Steubenville points" and sherds of Woodland pottery. A majority (51) of the projectile points from this Westheimer component conform to the "Steubenville Stemmed" type formerly described by Ritchie (1961) and later referred to by Ritchie (1971) as Fox Creek Stemmed (Ritchie and Funk 1973:Plate 66). Only one point was found to be a "Steubenville" or Fox Creek Lanceolate (Ritchie and Funk 1973:130). (See Table 1 for an attribute analysis of Steubenville and Fox Creek points.)

The second most important style at the Westheimer site is represented by 5 lanceolate, contracting-stemmed, or Greene points (Ritchie 1971; Ritchie and Funk 1973:Plate 66). A further five points are broad side-notched specimens, similar to Fox Creek Stemmed points in every attribute except the notches (Ritchie and Funk 1973:Plate 66). Not strictly classified as points are two Fox Creek Stemmed and two Fox Creek Lanceolate points reworked on their tip ends to end-scrapers (Ritchie and Funk 1973:Plate 67); these are the only endscrapers in Stratum 3.

Other bifaces of great importance are 23 (9 *en cache*) Petalas blades, first identified at the Petalas and Tufano sites near Athens in Greene County (Funk 1976). They have straight or convex bases and excurvate edges, sometimes pentagonal in outline, and usually attain their maximum breadth at or near mid-point (Ritchie and Funk 1973:Plate 68). Visible wear on the edge suggests their use as

knives (Ritchie and Funk 1973:135), possibly for cutting up sturgeon and for dressing of game. The blades were made of Normanskill chert.

The Westheimer assemblage includes a variety of bifacial drills; 3 drills chipped from long blade-like flakes and 5 drill tips (Ritchie and Funk 1973:Plate 67); one perforator or graver on a flake; flakes retouched into side scrapers; spalls modified as endscrapers; and knives made from broad, flat flakes bifacially chipped along one edge. The material used for most chipped stone artifacts was the local Eastern Onondaga chert, but a variety of exotic stones was also used, including Oriskany flint, Fort Ann flint, Pennsylvania jasper, and lower Delaware Valley argillite (Ritchie and Funk 1973:152). Rough stone tools included whetstones, and a variety of abrading stones, hammers and anvils (Ritchie and Funk 1973:Plate 70).

The Westheimer site was a habitation site, as evidenced by hearths, food refuse, artifact classes, and debitage, which indicated tasks such as butchering game, cracking nuts, cooking, flint-knapping, and wood-working; the data indicate a fall-winter occupation (Funk 1976:290). Two ^{14}C dates on hearth charcoal from the Fox Creek level at the site are A.D.410 \pm 80 yrs.*(Y-2350) and A.D.450 \pm 80 yrs.*(Y-2349) (Ritchie and Funk 1973:120). Only two pieces of worked bone were found in Stratum 3. No pipes, pendants, gorgets, combs, or other typical items found in the Central New York Point Peninsula context were found in the assemblage. The sole ornamental object was a tiny disc-shaped clay bead (Ritchie and Funk 1973:14).

The ceramic industry in Locus I, Stratum 3, at Westheimer included Jack's Reef Corded, Vinette, Dentate, Point Peninsula Plain, and Point Peninsula Rocker-Stamped (Ritchie and MacNeish 1949:101-107). The eastern New York linkages included trailed- and net-marked pottery. Decoration included rocker-stamping, dentate-

stamping, cord-marking, fabric-marking, and zoned incising; rim sherds were plain and trailed; vessels were conoidal-based with a minority flat or pointed (Funk 1968:Plate 5).

Data up to 1966 from the Ford, Weinman, Dennis, Lotus Point and other sites in New York indicated the Middle Woodland derivation of Fox Creek points, but verification was provided by the single-component Fredenburg site in Otsego County, excavated by Franklin Hesse (1968). The Fredenburg site was on Mill Creek, which discharged into the Susquehanna River. It was a small, single component camp about 30 feet in diameter. It is suggested that the Fredenburg site was a full winter hunting station. Its size and the number and distribution of 13 basin-shaped hearths indicate occupancy by a small band, perhaps two or three extended families. A date on hearth charcoal of A.D.360 \pm 100* (I-3442) corresponds with Westheimer dates (Ritchie and Funk 1973:121).

The site's main characteristics were the "Steubenville" (Fox Creek) Stemmed point and the Vinette 2 ceramics (Hesse 1968:27), which comprised dentate-stamping, rocker-stamping, pseudo-scallop shell-stamping, and corded-stick ornamentation (Ritchie and Funk 1973:117), reflecting a pattern nearly identical to that at Westheimer's (Ritchie and Funk 1973:356).

The Fredenburg artifact assemblage (Funk 1976:Plate 82) comprised 40 Fox Creek Stemmed Points, one Greene point, 8 side-notched or expanded-stemmed points, 3 small to medium broad contracting-stemmed points, 3 endscrapers on retouched Fox Creek Stemmed points, 19 ovate or trianguloid knives, miscellaneous biface fragments, drills on expanded square or triangular bases, 4 pitted stones, discoidal hammerstones, anvil stones, a grooved shaft rubber, whetstones, a polished celt bit, and several curious sandstone slabs each with one or two notches rubbed into the edge. The majority of chipped lithic tools were

manufactured from Onondaga chert; some were of argillite or chalcedony (Hesse 1968:31). Ceramic decoration included net-marked, plain rim, and dentate-stamped styles (Funk 1976:288); ceramic techniques included the coil method with grit-tempering (Hesse 1968:31). A similar pattern was found at the Ford site, in the Hudson Valley, which yielded 104 Fox Creek Stemmed and Lanceolate points (Funk 1976:127) with Middle Woodland pottery.

Setting the Fox Creek culture apart from other complexes in New York is the predilection for exotic lithic materials, such as Oriskany flint from the Western Mohawk Valley, purple weathering argillite from the lower Delaware Valley, and Pennsylvania jasper, but local chert predominated as a lithic material in upstate New York (Funk 1976:291).

Fox Creek points and ceramic contexts have also been reported in coastal New York (Kaeser 1968). Kaeser named the Fox Creek-like points CONY points, an acronym for coastal New York (Kaeser 1968:24). Most of the sites Kaeser refers to are multicomponent, with a representation of early Windsor tradition and Abbott Farm pottery types (Cross 1956). His research demonstrated that there was an association of CONY points with ceramics that were similar to New Jersey's Abbott Zoned Incised, Abbott Zoned Dentate, and Abbott Net-Imprinted (Kaeser 1968:18). The Abbott Farm in New Jersey had a good Fox Creek component that included Petalas blades (Funk 11/4/96, personal communication). Extensive Fox Creek sites, such as those at the Abbott Farm (Staats 1991:39) have yielded Fox Creek Stemmed points that have been reworked for use as drills or perforators and endscrapers, and shell- and grit-tempered pottery.

Kaeser (1968) excavated 24 shell middens in the Pelham Bay area of Bronx County in New York and placed the Steubenville-like points found

in them in the Middle Woodland period, based on a consistent pottery association. At Steubenville-like point-producing sites, drills and stemmed scrapers were also recovered, all of which appear to be alterations on broken projectile points (Kaeser 1968:21). Kaeser's (1968:17) lithic analysis of 246 Lanceolate and 94 Stemmed points from the Heye Foundation Collection at the Museum of the American Indian indicated that, with the exception of the local quartz, chert, and quartzite, all specimens were manufactured from the exotic Lockatong argillite from western New Jersey. The incidence of argillites as a lithic material rose sharply in the lower Hudson and Delaware Valleys (Ritchie 1971:52).

Fox Creek Sites in Massachusetts

Evidence from sites on the coast and along inland waterways will be used to describe the manifestations of the Fox Creek phase in Massachusetts, starting with a description of Fox Creek points. The descriptions by Johnson (et al. 1984) for Fox Creek points in Massachusetts are similar to those of Ritchie (1971) for Fox Creek points in New York State.

Fox Creek Stemmed and Lanceolate projectile points are also known as "Woodland" Stemmed and Lanceolate points in Massachusetts (Johnson et al. 1984:123,125). The Fox Creek Stemmed point has a lanceolate blade with weak shoulders. Its base is usually concave but occasionally straight with basal thinning. The basal width is slightly less than the maximum blade width, with an average of 0.8:1 ratio. The stem is parallel-sided or slightly tapering. There are no side notches. Pressure retouch occurs along the edges. The blade width ranges from 2.0-3.5 cm. and the length from 5.0-11.0 cm., yielding a length:width ratio of 1.2:1-3:1. The Fox Creek Lanceolate point blade is lanceolate with the lower

blade tending toward parallel or slightly recurvate edges. Its base is slightly concave, but occasionally straight. The base may also demonstrate thinning with occasional grinding or rubbing. There is often pressure retouch along the edges. The blade width ranges from 2.0-4.0 cm, and the length from 3.0-10.0 cm., yielding a length:width ratio of 1.15:1-2.5:1. Fox Creek Lanceolates can be distinguished from the general category of Bifacial Implement blades (Johnson et al. 1984:143-5) on the basis of the degree of finishing, the concave base, and a thin, flat cross-section.

Cape Cod and the Islands

Bradley (1987:40) has identified Middle Woodland sites on Cape Cod and the Islands based on the presence of Greene-like, Woodland (Fox Creek) Lanceolate, Woodland Stemmed, Woodland Corner-Notched (Jack's Reef), and Large Pentagonal points in artifact collections and from radio-carbon dates from a few excavated sites. Bradley (1987:40) excavated a single-component Woodland site in which 5 Woodland (Fox Creek) stemmed points were the only diagnostics in a small assemblage of 20 artifacts on Follins Pond in Dennis (MHC site #19-BN-549). McManamon's (1984) "Prehistoric Site Survey (1979-1981)" from Wellfleet to Provincetown yielded 4 Fox Creek points: 1 Stemmed of felsite and 1 Lanceolate of quartzite from Fort Hill, 1 Lanceolate of rhyolite from Wellfleet, and 1 Lanceolate of quartzite from Nauset Marsh (Thomas A. Doyle, Cape Cod National Seashore, 5/28/96, personal communication).

Fox Creek points (3 quartz, 1 felsite, and 1 weathered argillite) were unearthed by Ritchie (1969: Plate 34) in his excavations at the Cunningham site, a shell midden, on Martha's Vineyard. Most of these 5 diagnostic Fox Creek

points occurred in the site's basal Stratum 3, associated with Greene points, 5 Jack's Reef Corner-Notched points, and 1 Jack's Reef Pentagonal. Stratum 3 also included a rude side-notched point of felsite, four lozenge-shaped projectile points or knife blanks of felsite found *en cache* just above the subsoil, a lanceolate knife, and a crescentic felsite knife.

The pottery from Stratum 3 indicated that shell-tempering predominated (Ritchie 1969:109), although grit-tempering was present. Potsherd decorations from Stratum 3 (Ritchie 1969:Plate 33) comprised cord-decorated, Point Peninsula Plain, plain, scallop-shell, smooth, dentate rocker-stamped, incised, shell-tempered, and smooth with widely-spaced incisions. Bone objects of Stratum 3 included tools: ten splinter awls, a large cylindrical antler flake, fishing gear (barbed points), and a pendant or rattle made from a box turtle plastron.

This level has been dated from a hearth to A.D. 400 +/-80 yrs.* (Y-1533), indicating an age highly compatible with the chronological determinations at the Fredenburg and Westheimer sites (Funk 1976:293). Analysis of the stratigraphic data by Ritchie (Ritchie & Funk 1973:358) demonstrated that the habitancy by Middle Woodland groups was discontinuous; the refuse deposits resulted from numerous repeated sojourns by small groups who continuously shifted their camps over the site surface (Ritchie & Funk 1973:358).

Similarities to the archaeological picture on Martha's Vineyard are found on Cape Cod in Ross Moffett's sites (Ritchie 1969:208). Moffett's Rose site and Ritchie's Cunningham Site are the only two stratified sites containing Fox Creek components on Cape Cod, aside from the Willowbend site (discussed later).

Moffett's collection of approximately 6,000 artifacts, from the outer arm of Cape Cod (Anthony et al.:nd) was donated to the R.S.

Peabody Foundation in Andover, Massachusetts (Towle 1986:30). The Rose site, in Truro, was excavated by Ross Moffett in 1950 (Moffett 1951) and contains the Fox Creek component in its middle stratum. The Massachusetts Historical Commission did an inventory (MHC Prehistoric Site Files) of the Middle Woodland artifacts from the Rose Site and found 9 Greene points, 25 Fox Creek points (Stemmed and Lanceolate), and 8 Jack's Reef points from the middle stratum (Towle 1986:Table 3). Moffett recovered 49 sherds from the Fox Creek component, of which 45 were medium to coarse mineral-tempered (Moffett 1951:103). The main types of decoration were dentate-stamping, incising, rocker-stamping, and cord-wrapped stick impression (George Stillson, personal communication to Linda Towle, 1985).

One of the largest concentrations of Fox Creek points in eastern Massachusetts was collected from three sites in Wellfleet in the 1920's by Howard Torrey. These sites are now part of the Massachusetts Audubon Society's Wellfleet Bay Wildlife Sanctuary. Torrey's collection was

donated to the R.S. Peabody Foundation in Andover, Massachusetts. Towle's archaeological survey indicated that the Fox Creek component of these sites included Fox Creek, Greene, and Jack's Reef points (Towle 1986:28); additional Fox Creek points have been collected from the garden at the Sanctuary. Pottery was also found in association with the Fox Creek points (Towle 1984:15) at the Wellfleet sites.

Fox Creek Stemmed and Lanceolate points are found at all of the sites on Wellfleet Bay Wildlife Sanctuary (Sites #19-BN-85,-86,-87), except on Try Island. These sites comprise one of the largest concentrations of Fox Creek artifacts on the Cape (Towle 1984:6), second only to the Rose Site (19-BN-141) in Truro (MHC 1981:12; Towle 1986:28). The majority of the Fox Creek points were manufactured of felsite, but 2 were made of gray quartzite, and 1 of dark brown quartzite (Towle 1984:14). Fox Creek Stemmed and Lanceolate points from the Rose site are shown in Figure 1.



Figure 1. Cape Cod, Massachusetts: Rose site (Moffett collection). From left to right: 2 Fox Creek Lanceolate points, quartzite, and felsite respectively, middle stratum; 3 Fox Creek Stemmed points, quartzite, and 2 of felsite, middle stratum. (Courtesy of the Robert S. Peabody Museum.)

Subsurface testing at Site 19-BN-86 by Towle (1984) revealed 1 complete Fox Creek Stemmed point made of grey/brown quartzite. Seventeen of the 19 associated quartzite flakes appear to have been removed from the Fox Creek point (Towle 1984:12). Because the point is complete, these flakes were probably the final trim flakes removed from it. This indicates that this point was finished at the location where it was formed, and that at least the later stages of tool manufacture were occurring at this site (Towle 1984:13). Although 85% of the artifacts recovered during the Towle Survey were made of quartzite, this material was used for only 25% of the chipped stone tools in the Torrey collection. Felsite was the dominant raw material of the Torrey artifacts from this site (MHC Prehistoric Site Files; Towle 1984:14). Attributes of the Fox Creek points from the Moffett and Torrey collections are listed in Table 1.

The lithic, ceramic, and faunal assemblages of the middle of Moffett's Rose site on the Outer Cape are similar to those of the basal Stratum 3 of the Cunningham site on Martha's Vineyard. The Cunningham site, because it contains features and a date of A.D. 400 \pm 80* to supplement the lithic and ceramic data available at the Rose and Wellfleet sites, however, is the most informative of these three coastal Massachusetts Fox Creek sites (Towle 1986:31).

The Willowbend Site (19-BN-286) is located on the southern coast of Cape Cod in the town of Mashpee. It is a shell midden site, not very well stratified (Leslie Shaw 8/19/96, personal communication), with cultural deposits ranging in age from the end of the late Archaic period (6000-3000 B.P.) through the Late Woodland (1050-400 B.P.) (Shaw 1994:123).

Artifacts from the Early Woodland period (3000-2000 B.P.) included side-notched, stemmed, and Rossville-style bifaces, rolled copper beads,

and thick, grit-tempered ceramics (Shaw 1994:124). The majority of cultural deposits at Willowbend, however, are associated with the Middle Woodland period (2000-1050 B.P.). Numerous distinct layers, including those with shell and others consisting of a greasy, black sand without shell were identified and excavated separately (Shaw 1994:124).

The Middle Woodland artifact assemblage at the Willowbend Site includes predominantly triangular bifaces, with a low frequency of Fox Creek types. Ceramic sherds are still under investigation but in general, the Middle Woodland pottery is shell-tempered. Pottery is smooth with no decoration (Shaw 12/16/96, personal communication). Ceramics with smooth surfaces and no decoration is apparently a common occurrence on Cape Cod (Fred Dunford, personal communication to Leslie Shaw, 1996). Faunal material indicates that Willowbend fits into a seasonal pattern of food exploitation. Preliminary analysis suggests that the site was used primarily from the late fall through early spring (Shaw 1989).

The Middle Woodland bifaces at the Willowbend site include 3 Fox Creek Lanceolate points. The 3 Fox Creek Lanceolate bifaces are generally typical of others of this type found at sites in southern New England (Shaw 1989:39). One complete example of a Fox Creek Lanceolate point was recovered from a clear Middle Woodland context in Unit 34 at the bottom of Feature 5, 99-103 cm below datum; it had a $\delta^{13}\text{C}$ -corrected date of 1130 \pm 100 B.P. (Charcoal; Beta-31995) (Shaw 1989:Table 4). This example of a Fox Creek Lanceolate point has a well-defined base with no basal grinding. It was probably resharpened at least once. Polish on both faces of this biface, roughly in the middle of the blade, indicates some type of abrasion. The abrasion appears to be above the area where hafting would be expected to cover, and may be the result of transport abrasion or

possible use as a knife (Shaw 1989:39).

A second Fox Creek Lanceolate type was also found in the blackish soil of Feature 5, a possible domestic activity area. This point was made of a very fine-grained felsite and was heavily resharpened, resulting in an unusually short blade. A third Fox Creek Lanceolate point of coarse-grained felsite was found in an unstratified midden. This biface was apparently broken across the blade and then the distal end was modified to create a cutting or scraping tool. Measurements of the Fox Creek Lanceolate points from the Willowbend site (Shaw 1989:Table 8) are shown in Table 1.

There was no association between Fox Creek points and Greene points or Petalas blades at the Willowbend Site, but there were 71 triangular points, which were replacing the Fox Creek points by the end of the Middle Woodland (Shaw 12/6/96, personal communication). Five Rossville points, which are also associated with the Early Woodland in southern New England (Mulholland 1984), were recovered from stratigraphically distinct deposits radiocarbon-dated to the late Middle Woodland (Shaw 1989:133) at the Willowbend site, demonstrating an overlap in typology that was also shown in New York by Chilton (1994) at the Goat Island Rockshelter.

Other Sites in Eastern Massachusetts

A Fox Creek assemblage was identified at the Water Street site, at the mouth of the Charles River in Boston Harbor (Shaw 1984:67). The assemblage included the base of a Fox Creek Lanceolate projectile point; the base of a Petalas blade knife; two knife fragments; two knife or point tips; and a felsite hammerstone (Shaw 1984:Figure 6).

The measurements of the Fox Creek Lanceolate basal fragment appear in Table 1. It was made of black felsite and was very thin and

well-flaked. There was basal thinning on both sides with a small protrusion remaining near the center of the convex base, as is noted in other specimens of this type (Shaw 1984:Tool Inventory). The bifacial knife was made of rhyolite and its shape was asymmetrical, created by resharpening (Shaw 1984: Tool Inventory). The Petalas blade base was made of black rhyolite. The base was straight and well-thinned, but not ground. Both faces of the Petalas blade had a long flake scar originating at the base, similar to fluting (Shaw 1984: Tool Inventory); this characteristic appears in Petalas blades in New York (Funk 1976:66). The hammerstone was made of black felsite from a waterworn cobble and was bifacially modified. The majority of the edge was heavily battered, probably having been used for flintknapping (Shaw 1984:Tool Inventory).

The Fox Creek Lanceolate point and the Petalas blade knife are typologically similar to Fox Creek artifacts recovered from sites in New York (Funk 1976), and these types were used to determine the cultural affiliation of this occupation at the Water Street site (Shaw 1984:67). There is very little evidence of lithic reduction as a major activity at the site (Shaw 1984:Fig.23-26). The Fox Creek occupation may represent a short-term camp with a small diversity of production and processing activities being conducted (Shaw 1984:90). Luedtke (1975) also found possible evidence for Fox Creek points on Grape Island in Boston Harbor. Test pit 3 yielded a fragment which appeared to be the top of a Fox Creek type point although it could have been the tip of a Late Archaic Susquehanna tradition blade (Luedtke 1975:43). A grey slate biface knife or possible Fox Creek blade (Luedtke 1975:Plate 11) was found on the surface, and a grey felsite biface fragment, possibly a Fox Creek point (Luedtke 1975:Plate 10) was found.

The G.B. Crane Site in Norton, Massachusetts is also a site that indicates the presence

of the Fox Creek phase (Goodby 1993:61). The site is located on the Three Mile River, a tributary of the Taunton River (Goodby 1993:61). A small, lanceolate Fox Creek-like point of patinated grey-green chert and a Jack's Reef Corner-Notched point were diagnostic points found in Feature 5 (hearth/pit) with ceramic sherds connected to the terminal Middle/Late Woodland period activity on the G.B.Crane site (Thorbahn et al. 1983:97). In addition, a cache of 4 large Fox Creek Lanceolate-like bifaces of hornfels found on the site are evidence that non-local lithic raw materials were brought to the site in the form of partially completed tools (Thorbahn et al. 1983:91). This biface cache implies that Middle Woodland groups were storing lithic material on the G.B.Crane site for use during subsequent visits, possibly different parts of a seasonal round involving the Three Mile River drainage (Thorbahn et al. 1983:91).

Production of chipped stone tools from hornfels took place at several loci of lithic workshop activity. This was indicated by hornfels debitage and tools, including a broken Jack's Reef Corner-Notched point and fragments of bifaces (Thorbahn et al. 1983:91). This non-local lithic type can be attributed to the Blue Hills/Massachusetts Hill quarry complex in the Boston Basin. The hornfels from this source area has a distribution pattern in eastern and southeastern Massachusetts that extends into Rhode Island (Thorbahn et al. 1983:90).

Chert and jasper obtained from exotic source areas were found as both finished artifacts and debitage in several concentrations of cultural material. The 95 pieces of patinated chert debitage are visually identical to material derived from the Normanskill shale formation of eastern New York but may be from the Helderberg Escarpment or the Eastern Onondaga Limestone formations in eastern New York (Thorbahn et al. 1983:87). The widespread distribution of non-local chert and

jasper in Woodland period contexts throughout southern New England has been noted by Dincauze (1974:51, 1976:131-132).

The Wheeler site is in Salisbury, at the mouth of the Merrimack River in the Shawsheen Valley. Warren Moorehead, a former Curator of the Robert S. Peabody Museum in Andover, Massachusetts, excavated a Middle Woodland workshop in 1910. The 30 foot workshop contained six Fox Creek points and bases of felsite, 5 Greene points, and one-half bushel of flakes and "fragments of knives". Among the debitage were 18 elongated flakes. Greene points or small Fox Creek points could have been made from these elongated flakes, based on evidence in the debitage and in the bases of Greene and Fox Creek points found at the site (Eugene Winter, Robert S. Peabody Museum, Andover, MA, 7/2/96, personal communication).

The Shattuck Farm Site (19-ES-196), located on the Merrimack River in Andover, Massachusetts, is one of the most famous prehistoric sites in the lower Merrimack Valley (Luedtke 1985:1). It yielded Fox Creek, Greene, and Jack's Reef points (Luedtke 1985: Table 67, which excludes Luedtke's excavated points; Table 2). The site is located on one of New England's largest rivers, on a broad sandy alluvial terrace (Luedtke 1985:5). Shattuck Farm is located near rivers for use in travel, and near waterfalls and rapids, a source of spring anadromous fish runs (Luedtke 1985:27). The location of the Shattuck Site suggests use of the area by task groups exploiting the resources of this location and bringing food back to base camps elsewhere, primarily on the coast (Luedtke 1985:298).

The Buttonwoods Collection of the Haverill Historical Society represents sites from the lower Merrimack Valley, from midden assemblages on Cape Cod, and from a burial on Cape Cod (Mahlstedt 1986:2). Merrimack Valley as-

semblage inventories with Fox Creek points are listed in Table 2.

The Peabody Museum at Harvard acquired the collection of George Frazar, who collected artifacts from 14 sites within a 2.5 x 1.5 square mile (4 x 2.4 square km) area along the Mystic River (Anthony et al. 1980:16). These include the diagnostic Fox Creek points (Table 2), made primarily from felsite (Anthony et al. 1980:17).

The Ten Mile River is a drainage of major

points (Table 2) made mostly of local felsite or glacial drift from a local source.

Western Massachusetts

The Connecticut River Valley in western Massachusetts has several prehistoric sites that contain Fox Creek points. Almost all of the collecting areas are located on the floodplains and alluvial terraces of the Connecticut River and its tributaries. The Rodiman collection is derived from the Pioneer Valley, part of the Connecticut River Valley. The collection, which includes Fox Creek points, is now housed in the Springfield Science Museum, Springfield, Massachusetts (John Pretola, Springfield Science Museum, 1996, personal communication) (Johnson 1985:Table 2). Chert was the predominant raw material for most Middle Woodland point types and quartzites, argillites, felsites and Pennsylvania jasper appeared in smaller amounts (Johnson 1985:29). Tables 1 and 3 give the dimensions and location of, and Figures 2 and 3 show

examples of, Fox Creek Stemmed and Lanceolate points from several loci of the Rodiman collection (Johnson 1985:Table 2).

Conclusions

The Fox Creek tradition was defined by Funk (1968, 1976) based on a chronological sequence for the Middle Woodland in interior eastern New York. Funk considered the Freden-



Figure 2. Fox Creek Stemmed point from the Rodiman Collection: Locus D-2. (Courtesy of the Springfield Museums. Photo by Paul Ricard.)

archaeological importance (Anthony et al. 1980:1), although a relatively minor drainage which flows into the lower Blackstone estuary. It served as a communications corridor from Narragansett Bay to Massachusetts Bay. Artifacts collected by John Richardson in the drainage area number 20,000, including 4 Fox Creek Stemmed points of quartz (Anthony et al. 1980:22), showing the importance of prehistoric sites even in minor tributary systems. Anthony (et al. 1980:78) reported on several sites in eastern Massachusetts that yielded Fox Creek

burg and Westheimer sites the earliest in this sequence dating from A.D. 360 to 530. The lithic assemblages of the Fox Creek phase at the Westheimer and Fredenburg sites comprise the Fox Creek Lanceolate and Stemmed projectile points, the lanceolate Greene Point, endscrapers on reworked Fox Creek points, Petalas blades, knives, drills, sidescrapers, flake knives, grooved pebble hammerstones, and polished adzes and celts. The ceramic assemblage includes trailed- and net-impressed pottery, zoned incising, dentate-stamping, rocker-stamping, incising, and cord-marking. Local chert was the principal lithic in the interior New York sites (Funk 1976:293) while exotic Lockatong argillite was the principal lithic on the New York coastal sites, in addition to Pennsylvania jasper and the local quartz, chert, and quartzite (Kaeser 1968:17).

Funk (1968) created the "Fox Creek" nomenclature to separate these points from Steubenville types when there was doubt that the broad-stemmed and lanceolate points of New York and the Mid-Atlantic were equivalent in morphology, or in temporal and cultural position, to Steubenville points. Richard George recently described Steubenville Stemmed points on the basis of 62 points from 3 sites in southwestern Pennsylvania (Carnegie Museum of Natural History, Pittsburgh, PA, 11/6/96, personal communication)(Table 1). He feels his data will definitely place "Steubenvilles" in the Late Archaic and "put their placement as Paleo-plano points (Mayer-Oakes 1955) to rest." Funk is skeptical, however, that Steubenville points are not equivalent to Fox Creek points and believes that the "question is not resolved." If Steubenville Points prove to originate in the Late Archaic, this would place them in the Susquehanna tradition, leaving a gap of more than 1000 years before the time of the Fox



Figure 3. From left to right: Petalas blade, Fox Creek Lanceolate point, Petalas blade. From the Rodiman collection: Loci H3,H3,E3 respectively. (Courtesy of the Springfield Museums. Photo by Paul Ricard.)

Creek tradition in New York and New England (Funk 11/4/96, personal communication).

In two papers by Dincauze, "Cremation Cemeteries" (1968) and "The Atlantic Phase" (1972), the author demonstrates that the same shape (silhouette) can be reached by different technical routes. For example, Fox Creek points may look like reworked Coburn points of the Susquehanna tradition, and were therefore previously thought to be Late Archaic in age, but the flaking pattern was found to be different. The silhouette of a projectile point is an expression of the approach to an ideal form but is not sufficient to determine what the point is; in order to determine the ideal form, one must determine how it is made (Dincauze 10/4/96, personal communication). The descriptions of Fox Creek points from New York and Massachusetts indicate that the points are comparable. Dimensions and length:width ratios are similar in both states.

Dincauze (1974:51) also suggests the existence of a province, sharing ceramic attributes (rocker- and dentate-stamped) and

lanceolate bifaces (e.g. Fox Creek, Greene, and CONY), that extends from the Hudson Valley east to the Boston area. This may, therefore, be a part of the Early to Middle Woodland "Piedmont projectile point tradition" defined by Kinsey (1972:367, 1973, 1974), who attributes the similarity among Lagoon, Lackawaxen Stemmed, and Ritchie's Steubenville Stemmed (Fox Creek), as well as Rossville (Chilton 1994:26), to morphological carry-overs from Late Archaic through Early and Middle Woodland. Where Fox Creek points in New York and Massachusetts occur in good context, however, they appear to be Middle Woodland in age.

Figure 4 is a computer-generated site distribution map of Fox Creek points in southern New England (Mulholland 1984:Figure 56). It demonstrates that Fox Creek points cluster on northern Cape Cod and in northeastern Massachusetts. There is a thin scatter of Fox Creek components reported for the interior. Out of a total of 253 components for this style, there are only 14 in the interior, all of which occur in the Connecticut and Housatonic River Valleys (Mulholland 1984:165).

My investigations indicate lithic and ceramic similarities between Massachusetts and New York material. Stratum 3 at the Cunningham

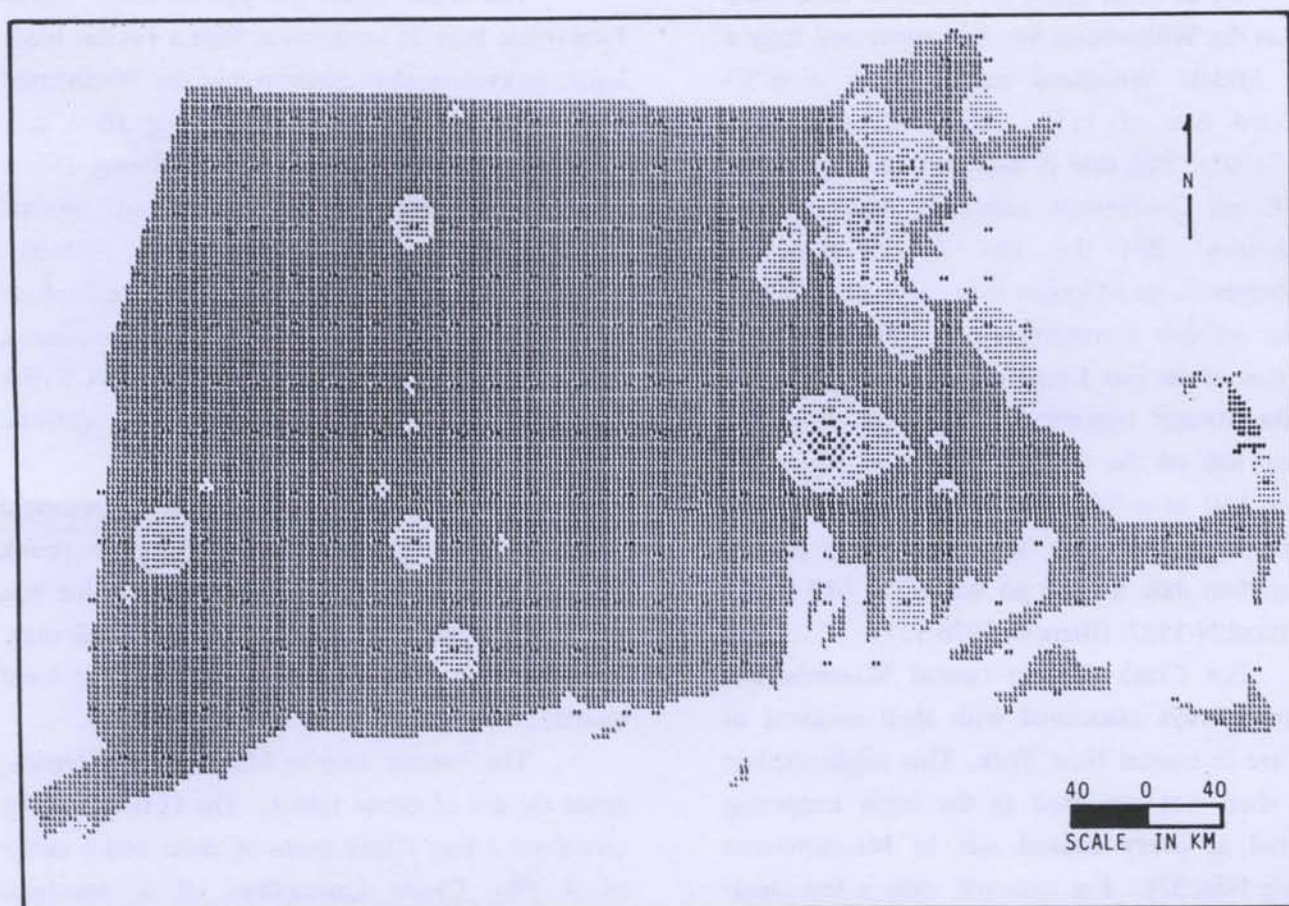


Figure 4. Site distribution map of Fox Creek points in southern New England (Mulholland 1984: Figure 56; reprinted by permission of the author.)

site on Martha's Vineyard demonstrated the closest correspondence in Massachusetts to the Fox Creek phase in New York. Ritchie obtained a radiocarbon date of A.D. 400 \pm 80* from Stratum 3 of the Cunningham site, which coincides with the chronological determination at the Fredenburg and Westheimer sites. In addition, a grey Onondaga chert fragment, possibly a Fox Creek Stemmed point, was recovered from a complex pit feature (71A) at the Astra-10 site in Westborough, associated with a $\delta^{13}\text{C}$ -corrected date of 1500 \pm 70 B.P. (Charcoal;Beta-84377) (Curtiss Hoffman, Bridgewater State College, Bridgewater, MA, 2/1/1997, personal communication); or A.D. 450 in comparison to Ritchie's dates.**

On the other hand, a Fox Creek Lanceolate point at the Willowbend Site was recovered from a clear Middle Woodland context with a $\delta^{13}\text{C}$ -corrected date of 1130 \pm 100 B.P. (Charcoal; Beta-31995). This date is later than those for other Fox Creek components indicating either of two possibilities: that the Fox Creek phase in Massachusetts lasted longer than originally thought, or that the date corresponds to a later component than that of the Fox Creek phase. Some evidence for the former hypothesis may come from the Staiano site on the Sudbury River, in which the bottom half of a "Fox Creek type of knife" was found just outside the top edge of a pit. A radiocarbon date for the pit was 975 \pm 85 B.P.* (Charcoal;N-1587) (Blancke 1978:177).

Fox Creek sites in coastal Massachusetts are not always associated with shell middens as they are in coastal New York. This might explain why shell was not used as the main tempering material at every coastal site in Massachusetts (Towle 1986:32). For example, only a few shell-tempered sherds occurred at the Rose Site, while at the Cunningham site, a shell midden, the majority of sherds was shell-tempered. The Rose Site and the Cunningham Site both contained diagnostic

ceramics with dentate-stamping, incising, and rocker-stamping, and the Rose Site also yielded the diagnostic cord-wrapped stick impression. These decorative techniques for ceramics at the Rose and Cunningham sites were similar to those used at the New York sites, except that net-marked ceramics, which were common at both interior and coastal sites in New York sites, were not present at these two Cape Cod sites.

Stratum 3 at the Cunningham Site also yielded the diagnostic Fox Creek points in association with Greene points, and Jack's Reef Corner-Notched points. The Fox Creek Stemmed points at Cunningham were of local quartz and felsite but also of exotic weathered argillite.

The Water Street site yielded a Fox Creek Lanceolate base in association with a Petalas blade knife, as evidenced in Stratum 3 of the Westheimer site. The Petalas blade had a long flake scar originating at the base, similar to fluting (Shaw 1984: Tool Inventory). This characteristic appears in Petalas blades in New York (Funk 1976:66), which is further evidence for the Fox Creek phase in Massachusetts. The Willowbend site contained a drill modified from the distal end of a Fox Creek Lanceolate point. Such reworking is a diagnostic trait exhibited in New York assemblages.

In New York, local chert was the principal lithic in the interior New York sites (Funk 1976:293), while the exotic Lockatong argillite was the principal lithic on the New York coastal sites, in addition to Pennsylvania jasper and the local quartz, chert, and quartzite (Kaeser 1968:17).

The interior sites in Massachusetts demonstrate the use of exotic lithics. The G.B.Crane site contained a Fox Creek point of chert and a cache of 4 Fox Creek Lanceolates of a non-local hornfels, from the Braintree Quarry, where people of the Fox Creek phase seemed to be the major quarriers (Bowman and Zeoli 1977:45). The cache implies seasonal rounds. Middle Woodland

assemblages, such as those exhibiting the Fox Creek phase, have produced considerable evidence for long distance trade. For example, most of the Pennsylvania jasper found in eastern Massachusetts sites appears to have entered Massachusetts during the Middle Woodland period (Luedtke 1982:299). Another example is the Rodiman collection in western Massachusetts that yielded projectile points of the exotic Pennsylvania jasper. The low frequency of exotic material on Cape Cod and the Islands suggests the insular nature of the Cape and Islands. The bulk of the lithic material used was quartz, quartzite, and felsite from the beaches, river channels, and glacial drift (Bradley 1987:41). In eastern New York, most of the Fox Creek sites are found on high bluff sites along rivers, or on inland streams. Fox Creek sites are along the lower Hudson Valley and the Mid-Atlantic coast. In Massachusetts, most of the Fox Creek sites are found along streams, on alluvial plains, or on the coast. Fox Creek sites, however, whether interior or coastal, or in New York or in Massachusetts, are considered seasonal camps occupied during annual subsistence rounds.

The Fox Creek Stemmed and Lanceolate points in Massachusetts are similar morphologically and temporally to the Fox Creek Stemmed and Lanceolate points in New York State. There is also a similar range in types of lithics for the Fox Creek points in New York and Massachusetts: Fox Creek Stemmed and Lanceolate points, Greene points, and Petalas blades. In conclusion, the Fox Creek phase is a mani-

festation in Massachusetts that has lithic and ceramic associations and settlement patterns that exhibit similarities to the Fox Creek phase as it was defined in New York.

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NOTES

* Denotes old radiocarbon dates which are not $\delta^{13}\text{C}$ corrected.

** A.D. 1950-1500 = A.D. 450.

Table 1: Attribute Means for Steubenville (PA) and Fox Creek (NY,MA) Projectile Points

Site	Context/Location	N	L(mm)	W	Stem L	Stem W	Th	Wt(g)	Reference
3 sites in s.w.PA ¹	Steubenvilles	62	44.6	25	14.2	19.7	7.5	-	R. George
Westheimer ²	Hudson R. Valley/NY	29	65.22	33.25	13.6	24.42	8.79	-	R. Funk
Rodiman-Locus D-2 ³	Conn. R. Valley/MA	1	83.0	32.0	18.0	22.0	19.0	27.9	J. Pretola
Rodiman-Locus H-3 ³	Conn. R. Valley/MA	1	70.0	25.0	-	-	15.0	-	"
Willowbend ⁴	Stratum B/Cape Cod/MA	3	47.15(N=2)	22.77	-	-	8.77	-	L. Shaw
Water Street ⁵	Boston Harbor/MA	1	31.0	27.0	-	-	6.0	5.0	"
Rose ⁶	middle stratum/ Cape Cod/MA	8	96.8(N=2)	31.76	-	22.93	8.82	-	R. Moffett
Rose ⁶	" /Cape Cod/MA	4	80.49	29.24	-	-	9.69	-	"
Railroad	Wellfleet/Cape Cod/MA	5	59.31(N=4)	28.21	-	28.21	9.85	-	H. Torrey

Notes

1. Steubenville points of local chert: 77% expanded, 16% contracting, 5% straight stems, 5% basal grinding.
1 Fox Creek point found in Allegheny County, PA, in an Early Woodland stone/earth burial mound, was made of exotic rhyolite, but Steubenvilles in PA are always of local chert (George 11/6/96, personal communication).
2. Little basal grinding; atypical characteristics: side-notching?, expanding and contracting stems (Funk 1996, personal communication).
3. No basal grinding; Locus D-2=Fox Creek Stemmed; Locus H-3=Fox Creek Lanceolate.
4. Three Fox Creek Lanceolate points of felsite.
5. Basal thinning on stem.
6. Fox Creek Stemmed (8) and Fox Creek Lanceolate(4) points of felsite and quartzite.

Table 2: Projectile Points of Eastern Massachusetts

Site/Source	Location	Rossville	Fox Creek Stemmed	-or-	Fox Creek Lanceolate	Greene	J.R.C.N.*	Reference
Shattuck Farm	Merrimack R.	-		-14-		4	1	Luedtke
N.Andover Hist.Soc.Coll.	N.Andover			-16-		4		"
Buttonwoods Coll.(19-ES-44)	Merrimack R.	-	1					Mahlstedt
" (19-ES-28)	"				1			"
" (GRVL06)	"		3		2		4	"
" (QUIL)	"		5		7	1	1	"
Heard Pond	Sudbury	24	26		41	29	>1	Anthony et al.
Bates Collection	Concord R.	-	3		2			"
Neal Gate Site	N.River, Scituate	-	6		13	7		"
Union St.Brdg.Site/HatchColl.	N.River,Norwell	4	4		12	12		"
Frazar Coll.(Harvard)	Mystic River	23		-12-		14?	10	"
Torrey Coll.(19-BN-85)	Wellfleet	5	2		1	1	1	Towle
" (19-BN-86)	"	2	2		-	-	1	"
" (19-BN-87)	"	-	3		10	3	3	"

*J.R.C.N. = Jack's Reef Corner-Notched

Table 3: Projectile Points of the Rodiman Collection from the Connecticut River Valley

MHC Site No.	Rodiman Locus	Rossville	Fox Creek Stemmed	Fox Creek Lanceolate	Greene	J.R.C.N.*	Bifacial Implement Blades
19-HS-280	H-2	3	1	3	0	3	0
19-HS-283	H-3	2	0	1	1	1	22**
19-HS-284	H-4	0	1	0	0	0	0
19-HS-262	D-2	0	4	3	0	1	12
19-HS-267	E-3	1	0	0	2	1	17**
19-HS-266	E-2	4	6	2	0	9	38**
19-HS-261	D-1	1	0	2	0	2	0
19-HS-273	E-9	0	1	0	1	0	0
19-HS-263	D-5	0	0	1	1	0	0
19-FR-245	B-4	0	1	0	0	1	0

* J.R.C.N. = Jack's Reef Corner-Notched

** Includes at least 1 Petalas Blade

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A BRIEF NOTE ON SUBMISSIONS

The Editor solicits for publication original contributions related to the archaeology of Massachusetts. Manuscripts should be sent to the Editor for evaluation and comment. Authors of articles submitted to the Bulletin of the Massachusetts Archaeological Society are requested to follow the style guide for American Antiquity 57:749-770 (1992).

Authors with MAC and IBM-PC compatibles are encouraged to mail disks with files in Microsoft Word or WordPerfect 5.1; and another file in ASCII. Additional instructions for authors may be found in the Bulletin of the Massachusetts Archaeological Society, Volume 50, Number 2:76 (1989).

Radiocarbon ages should be reported as radiocarbon years \pm sigma B.P. Please state whether $\delta^{13}\text{C}$ -corrected (give $\delta^{13}\text{C}$) or uncorrected and what material was assayed. If calibrated dates are submitted, please provide information on what calibration method was used.

A PROBABLE HIDING PLACE OF KING PHILLIP'S ROYALTIES

Russell Herbert Gardner

There is no more poignant and dramatic episode of King Phillip's War than the capture of Annawan at the so-called Annawan's Rock in Rehoboth, Massachusetts, and his ceremonious presentation of King Phillip's royalties to Captain Benjamin Church on the 11th September, 1676. This site is today a State Historical Park. The date of August 28 on the state's sign is incorrect as Church was still searching for Annawan until the later date, and the moon was not full, as described by Church, until September 11, 1676 (Church 1975:170).

Annawan's camp was located by the sound of the pounding of a pestle in a mortar and, after a dramatic stalk and capture, all retired after the evening meal. Captain Church and Annawan remained awake, however, and after a time the old warrior rose and walked away from the camp, returning after a short time in bright moonlight and carrying something in his hands. In Church's words (Church 1975:170), the story continues:

Coming up to Captain Church he fell upon his knees before him and offered him what he had brought, and speaking in plain English, said: Great Captain, you have killed Phillip and conquered his country, but I believe that I and my company are the last that war against the English, so I suppose the war is ended by your means; and therefore these things belong unto you.

Then opening his pack, he pulled out Phillip's belt, curiously wrought with black and white wompom in various figures and flowers, and pictures of many birds and

beasts. This when hung upon Captain Church's shoulders, it reached his ankles. And another belt of wompom he presented him with, wrought after the former manner, which Phillip was wont to put upon his head. It had two flags on the back part which hung down on his back, and another small belt with a star upon the end of it, which he used to hang on his breast. And they were all edged with red hair, which Annawan said they got in the Muh-hog's country. Then he pulled out two horns of glazed powder and a red cloth blanket. He told Captain Church, these were Phillip's royalties which he was wont to adorn himself with when he sat in state, that he thought himself happy that he had an opportunity to present them to Captain Church, who had won them.

In a letter from Governor Josiah Winslow to King Charles II, dated June 26, 1677, the Governor:

craves His Majesty's acceptance of these few Indian rarities, being the best of our spoils and the best of the ornaments and treasures of the Sachem Phillip, the grand rebel (Winslow 1863-4 [1677]:481).

The letter proceeds to describe these articles exactly as had Church, excepting the two horns of glazed powder and the red blanket. Thus Winslow sent the royalties of King Phillip to the then King of England. Nothing further is known of them though theories and speculation abound.

Over the years there has been great interest in this mystery. Such authors as Ebenezer M. Peirce in 1878, and Frank G. Speck in 1922, both visited and wrote about the Annawan Rock site, but never mentioned any special features other than

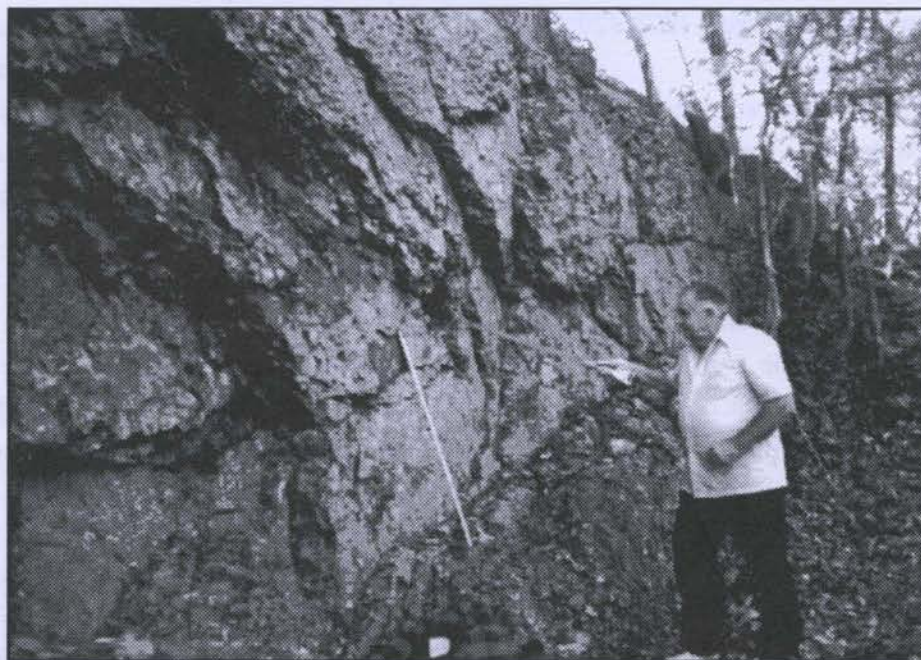


Figure 1. The author pointing out the cavity, East Face.

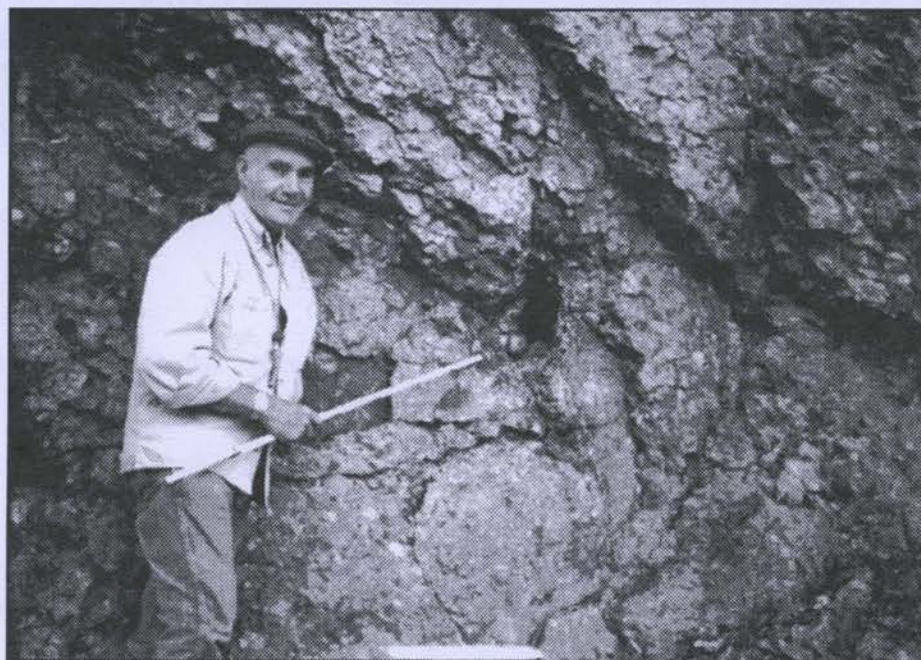


Figure 2. Don Pearson points to a closer view of the cavity, East Face.

general measurements and Church's account of the capture. The ledge is approximately 75 ft (22.5 m) wide and 25 ft (7.5 m) high (Peirce 1878:229; Speck 1928:36,37,61-67).

In the fall of 1994, while returning with a friend from the Mohegan Reservation in Connecticut, we stopped at Annawan's Rock and walked about the perimeter. As we were passing by the easterly face of the ledge, my friend looked up and commented on an apparent hole in the rock face some 8 ft (2.4 m) above the walkway, and about an equal distance below the top of the ledge (Figure 1). I took a quick photograph as dusk was fast approaching, and vowed to return for a better look.

About a week later I returned to take a better look at this feature with another friend, Don Pearson of Lakeville, Massachusetts (Figure 2). In the meantime I checked on the articles described in Church's account, and realized that in a bundle, such as would be rolled in a small blanket or cape, they would fit neatly into such a cavity if it were wide and deep enough. So we measured, and found the hole in the rock face penetrated straight into the ledge for nearly a yard (1 m) with a 4 by 6

in (approximately 10 x 15 cm) diameter (Figure 3). It was perfectly dry and there seemed to be no fissure from above whence water could enter. It was a perfect hiding place, and with a stone in the entrance, it would be almost impossible to detect. The ledge is composed of puddingstone, and the spot may have been a natural depression filled with stones removed by human agency. There is no obvious working of the stone by human hand (Figure 4).

One thing is certain. There is no other reasonable location suitable for hiding King Phillip's long lost royalties in this location. It is surrounded by the extensive 14 square mile (approximately 36 square km) Squannakonk Swamp, and is just the proper distance from the site of Captain Church's camp for Annawan's moonlight walk into history over 320 years ago. Despite Church's assurance of amnesty to Annawan's company, Annawan himself was shortly thereafter executed at Plymouth. Annawan's Rock remains, with possibly one of its secrets here revealed, a fitting natural monument for a most remarkable native leader, Captain Annawan of Pokanoket.

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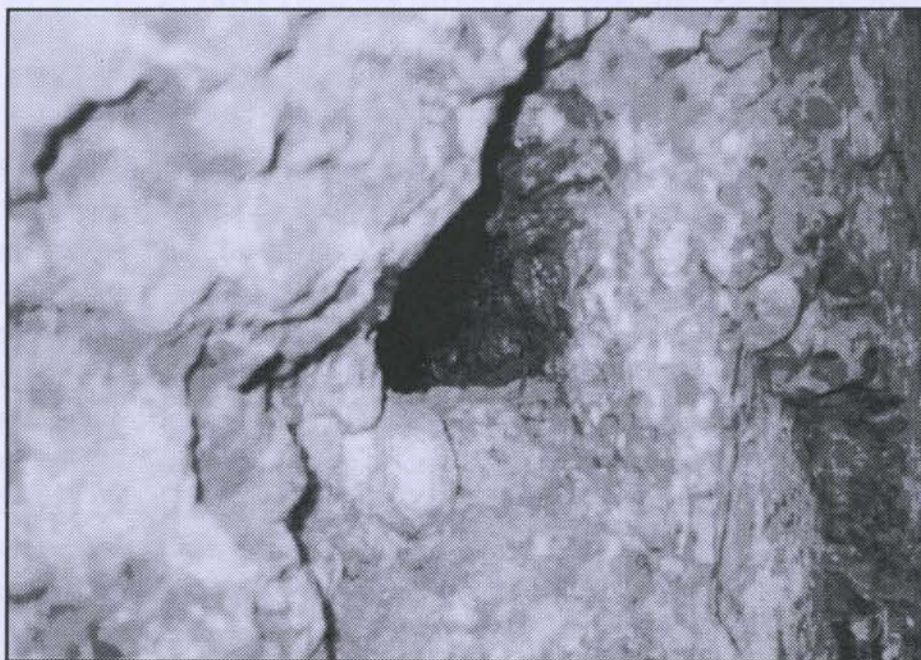


Figure 3. Outer view of the cavity in the ledge, East Face.



Figure 4. Interior view of the cavity to its deepest extent, East Face.

WHEN WORLDS COLLIDE: ARCHAEOLOGY IN THE NEW AGE - THE CONANT PARCEL STONE PILES

Alan Leveillee

Abstract

Stone features and other landscape elements within the Conant Parcel of land in Carlisle, Massachusetts, have been the subject of recent investigations from differing research perspectives. This article outlines the approach taken by The Public Archaeology Laboratory Inc. during a cultural resource management study of the Conant land and presents the results and interpretations of the survey.

Introduction

Archaeological and anthropological research of enigmatic above ground stone features became an element of a cultural resource management project under my direction last year. More specifically, a number of stone piles in Carlisle, Massachusetts, have become the focal point of public interest and debate and The Public Archaeology Laboratory Inc. has entered into the dialogue.

Research Contexts

Discovery, documentation, and interpretation of stone features across the New England landscape have been dynamic archaeological topics in recent decades. A unique characteristic of the overall issue is the active involvement of groups as diverse as the general public, amateur archaeologists, organized societies (Whittall 1979),

independent researchers (Fell 1989; Mavor and Dix 1989), college groups (Pendergrast n.d.), historians (Goodwin 1946), and professional archaeologists (Jett 1994; Crosby 1992, 1993; Harrison and Leveillee 1995). The resulting body of literature is as eclectic and diverse as the parties involved. These studies range from speculation and fiction to scholarly ethnohistory and systematic excavation, with interpreted origins for stone features including Precolumbian European exploration, Native Americans, EuroAmerican farmers and yes, aliens. The diversity of perspectives, agendas, and backgrounds that characterize debates over stone feature investigation combine to lessen the likelihood of reaching any kind of research consensus.

Information available in local libraries and bookstores, exemplified by Mavor and Dix (1989), and Fell (1989), has become standard reference for the general public as well as for independent researchers, some of whom accept pseudo scientific premises as valid without questioning underlying assumptions, methodologies, and conclusions. Generally, popular histories attribute stone features to small-scale Precolumbian migrations or past Native American civilizations. Stone features are often interpreted as symbolic, as opposed to utilitarian, with astronomical, solar, or lunar alignments.

The body of literature generated by academic research and professional archaeological investigations is not readily available to the general public and, relative to popular publications, is less accessible to independent researchers. Studies that are conducted within rigorous parameters, that exercise hypothesis formulation and testing, and that

are subject to review, are seldom available to the inquiring public. Most professional archaeological investigations of stone features conclude with interpretations that reflect utilitarian land use, most often agricultural or agrarian. However, some professional work has focused on the documentation of Native American stone and brush piles serving as "Travel Shrines" (Jett 1994), boundary markers (Harrison and Leveillee 1995), and as geophysical landscape elements of myths surviving in Native oral tradition (Crosby 1992, 1993).

Stone and Stone Walls

In 1871, the United States Department of Agriculture conducted a study of fencing, including stone walls, within the country. Of the 14,030 miles of fencing recorded in Massachusetts at that time, "almost half" were of stone (Allport 1990). This statistic raises two important points. First, stone walls represent a common landscape feature. Second, there was an almost equally intensive use of other forms of fencing (e.g. wood rails, stumps, and eventually wire) that decompose over time. Thus stone wall segments that today appear to begin and end abruptly, in ways that do not indicate practical use as enclosures, must be examined with the awareness that other forms of fencing may have originally been used in conjunction with the stone walls. Walls encountered today that do not seem to make sense in terms of EuroAmerican agricultural activities can fit when broader ranges of data are considered (Allport 1990).

Factors described in relation to stone walls also apply to stone piles. Stone piles are often found in association with lands cleared for agricultural purposes.

Native Americans and Stone

New England researchers have documented

Native American use of field stone. The Narragansett Indian Reservation in Charlestown, Rhode Island, contains stone piles and stone walls; documentary evidence, Native American informants, and archaeological data indicate that ceremonial activities were associated with some, but not all, stone piles (Harrison and Leveillee 1995).

Description of the Narragansett boundary customs includes the social and ritual aspects of a "crowning" ceremony where:

A person wishing a tract of land to settle upon, made application to the Indian Council, and, if granted, the Council, with the applicant, went upon the ground and marked trees, or erected bounds around the tract; then, with the applicant standing upon the soil, some member of the Council would remove a piece of the turf from the ground and place it upon the head of the applicant, and place therein a twig; which ceremony was called crowning, and by this act putting them in full possession of the land. Often these ceremonies were attended with joviality, as attested by the broken bottles at some of the prominent bounds. (Kenyon 1881).

Following comprehensive survey most stone piles on the Narragansett Reservation appear however to have been the byproduct of relatively recent (nineteenth century) agricultural activities; those that were not boundary markers were found in association with domestic spaces.

Stephen Jett (1994) has recently synthesized published data regarding Native American cairn and brush travel shrines throughout eastern and south-eastern sections of the country. It is unclear how far back into prehistory such practices occurred: the artifactual record of such features would not be expected to contain temporally diagnostic cultural materials. Jett notes that Atlantic coast Algonquian-speaking groups constructed stone and brush piles upon which to place additional stone, brush, or whisky (in later years) as commemorative offerings.

References to these shrines appear in the literature as early as 1796. (Jett 1994:65).

During the Historic Period and into the twentieth century the Native Americans have been regarded as skilled stone masons. Many walls in southern New England were constructed by Native Americans as indentured servants, slaves, hired laborers, and later as independent contractors. It is reasonable to conclude that the Native stone construction predates European influence.

Regarding Astronomical Observations

Roger Williams (1936 [1643]) reported that Narragansett Indians (including children) in the seventeenth century had a great understanding and awareness of the rising and setting of specific stars and constellations.

Certainly, Native Americans in New England had a knowledge of the celestial dome. According to Native American informant, Onkwe Tasi, however, indigenous New Englanders did not construct stone structures to calculate celestial, solar, or lunar change. Instead they relied upon the variety of predicative faunal, floral, and climatic cues marking transitions between seasons.

The Carlisle Project Area

The Conant topography is a rolling pine forested terrain interlaced by wetlands and vernal pools. The landscape is very rocky with numerous boulders and bedrock outcrops. No lithics suitable for stone tool manufacture were noted.

Mr. Mark Strohmeyer is a professional grant writer and an independent researcher and lecturer. He walked the project area with me in May 1995 pointing out multiple landscape features. They included stone walls, wall sections, boulders, outcrops, stone piles, and low densities of historic cultural material (glass, enamel kitchen-

ware, and farm equipment). Some of the stone piles are built upon glacial boulders; others lack above ground evidence of a glacial erratic base.

During the walkover Mr. Strohmeyer talked about his independent research, often referencing Mavor and Dix (1989). He observed that within the project area, walls run from large glacial boulder to boulder and then to vernal pools. Mr. Strohmeyer stated that this is a theme he sees repeated throughout the region. He believes that these kinds of walls are not functional but ideological, and that they were built prior to European settlement as affirmation to a link between the earth, sky, water, and the people. Mr. Strohmeyer feels stone piles are markers for observation of the winter solstice and serve as commemorative places. He noted that he often sees recent "offerings" of beverage bottles, leading him to believe that contemporary Native groups or individuals still visit these places. Mr. Strohmeyer reports that he has not been successful in verifying this through informant interviews with Native Americans because he has found them reluctant to discuss the issue.

Mr. Strohmeyer indicated a rock outcrop, where several large glacial boulders are situated so as to create several small, irregular fissures or crevices. In one crevice Mr. Strohmeyer pointed out what he described as "a face looking out toward the wetland and the winter solstice." To me, there was no evidence to suggest the stone had been worked, nor were there any recognizable anthropomorphic details.

During the walkover the landscape appeared to me to be dominated by nineteenth and twentieth-century agrarian land use features. Walls, glacial erratics, and bedrock outcrops punctuated the project area's topography. The land is not suited to plowing, being too rocky and variably steep. The flora seemed to represent reforested pasturage.

Several rock piles pointed out by Mr.

Strohmeyer were impressive. One in particular is built upon a glacial boulder and is constructed with six to seven courses of dry laid fieldstone. It is more a construction than a pile and no doubt is the result of a labor-intensive effort. This is the stone referred to as the "winter solstice" marker in a *Carlisle Mosquito* editorial by Bill Holland (1994).

Mr. Strohmeyer also identified this stone pile as a "winter solstice" marker. In another location Mr. Strohmeyer pointed out what appeared to be an early twentieth-century, domestic refuse scatter. It includes a broken glass jar and three rusted metal buckets or pans. The three containers had their bottoms rusted out and were lying overturned, top down, in the refuse. Mr. Strohmeyer asserted that these remains represented a cultural pattern. He indicated his belief that this scatter constitutes an offering, and that Native Americans removed the bottoms of the containers and placed them upside down. This deposit is in close proximity to the "face in stone" feature.

A second informant, Anita Fast, Ph.D., accompanied me on another walkover of the Conant Parcel in late May 1995. At that time Dr. Fast provided copies of three contribution pieces written by her and published in the *Carlisle Mosquito* (Fast 1993) as part of a series focusing upon stone features within the project area.

Anita Fast is a psychotherapist and independent researcher who practices holistic therapy and counseling. She moved to the area in 1991, and has since become interested in the stone features within the Conant Land Parcel. She cited Mavor and Dix as an influence on some of her interpretations; Byron Dix and she had met and walked throughout the Parcel investigating some of its features. Dr. Fast referenced an association with "a Cherokee medicine woman" who has guided her along paths of spirituality and "visioning." Dr. Fast reported to me experiencing extrasensory insights while meditating in proximity to the stone

piles on the Conant Parcel. Based in part on her personal experiences and on her independent research, Dr. Fast sees the landscape at Conant as a spiritual place where Native Americans held community ceremonies and taught their children to attune themselves to the metaphysical aspects of their culture. Dr. Fast noted irregularities in stone wall segments as representing "prayer seats," solstice stones, and other ideological manifestations.

In one project section Dr. Fast pointed out two "sculptures" of recent origin. One is metal, constructed of rusting farm equipment parts and wire. The second is a small (approximately 8-inch, or 20 cm) cluster of four upright pine sticks. Dr. Fast also pointed out a glacial cobble in close proximity which has been modified by pecking and grinding. The granitic glacial boulder has a bowl shaped "basin" on top and two "arrows" or pointed triangles (pointing west) on the sides. These "arrows" appear to have been weathering and cracking features enhanced and outlined through directed percussion, or pecking. Differential weathering suggests to me that this pecking is of recent origin.

Like Mr. Strohmeyer, Dr. Fast believes strongly that the materials within the project area landscape represent expressions of spirituality and attributes them to a long history as a sacred place.

I solicited the insights of Onkwe Tasi, a Native American, and long-time resident of Dracut. He graciously accompanied me on a walkover of the area. I asked Onkwe Tasi to comment on the project area including features identified by Mr. Strohmeyer and Dr. Fast during earlier walkovers.

Onkwe Tasi feels the stone piles are not of Native American origin. He views them as a result of EuroAmerican land use. While he agrees they are of interest and represent considerable effort, he noted that his ancestors had no need to construct elaborate calendars, or to "go to all this trouble and work to mark the rising or setting of the sun."

Onkwe Tasi stated that he knew of no contemporary Native groups using sites like this for ceremonial purposes. He did acknowledge that today there are many people, non-Natives as well as Natives, who embrace a non-mainstream spirituality and who could be expressing it here.

I conducted a walkover alone in June 1995. The goal was to refine sensitivity maps, to verify mapping information, and to re-examine landscape features identified to date. During this final walkover I observed low densities of quahog shell placed in four locations, including atop the "Solstice stone." These shell offerings had not been present during previous walkovers.

An Assessment of the Data

A review of relevant data led me to reject a hypothesis that stone piles and stone walls located within the Conant parcel represent Native American ritual structures built in alignment with celestial events such as the sunrise or winter solstice.

The present Conant Land Parcel must be viewed as an evolving landscape: it is a landscape affected by natural and cultural processes that continue to occur at various scales and levels. Large scale physical processes have resulted in the current topography, hydrology, and soil characteristics. Relatively recent cultural settlement and subsistence processes and patterns are most relevant to the project area as we recognize it today. Although the Conant Parcel may appear pristine, a wooded "natural setting," it is actually a built environment, reflecting relatively recent, dramatic cultural modifications. The present wooded environment, for example, is a result of reforestation of previously open lands (± 100 years ago).

There can be little doubt that EuroAmericans were the agents of the landscape features we recognize within the project area today. The existing walls have their origins in specifically

EuroAmerican agrarian practices. The land would have served as wood lots, orchards, and pasture; the project area was cleared of trees by the early to mid-nineteenth century to meet increasing demands for firewood and to open pasture lands. Glacial boulders and smaller fieldstones (and probably wooden rails and branches) from across the immediate area served as the raw material for the numerous stone walls and piles interlacing the project area. Some limited agriculture may have taken place in isolated sections. If Native American above-ground features existed within the project area prior to European settlement, it is highly unlikely that those features would have been recognized, respected, curated, or maintained by the settlers who cleared the land and modified it so radically through the eighteenth and nineteenth centuries. Any hypothesis that attributes extant features to pre-European land use would have to account for the survival of those features during centuries of sequential occupations, ownership, and associated landscape modifications.

Contemporary Anthropological Issues

Data collected during informant interviews indicate that there have been relevant questions raised about archaeological studies, and about contemporary anthropological, sociological, and ideological issues as they relate to this parcel of land. This landscape should be considered a legacy resulting from the dynamic interaction between human culture(s) and the environment. The region has been occupied by Native American hunters and gatherers, EuroAmericans settling the frontiers after initial colonization, subsistence farmers, agriculturalists, cottage industrialists, and most recently families residing locally and commuting to nearby commercial and urban centers. Each of these differing cultures has, in its own time, impacted the land. Each has also perceived its

surroundings differently, understanding and interpreting them in terms of unique sets of cultural criteria: beliefs, technologies, economics, and politics. These "cognitive landscapes," or changing environmental perceptions through time, may not necessarily be represented within or adequately investigated through remnant material culture assemblages.

Late nineteenth and twentieth century "wilderness" movements have had promoted reforestation and preservation of wooded environments. The benefits and romantic notions of the wilderness movement ideal are illustrated by Thoreau's celebrated experiences at Walden. Though few of us can schedule such hiatuses from our urban-based everyday lives, even a day hike through the woods can provide a rewarding experience. For many of us a solitary walk into the woods provides rare opportunity for recreation, contemplation, meditation, and even spirituality. The "offerings" in the project area noted by Dr. Fast, Mr. Strohmeier, Bill Holland, and PAL Inc. staff may be reflections of Onkwe Tasi's observation of individuals (perhaps Native Americans, perhaps non-Natives) expressing those feelings. Some of these modern sentiments are expressed in the material record in various ways, including rock carving, that have the potential to be misinterpreted by others.

Individual and collective perceptions and

projections of the Conant Land parcel landscape as "a special place" have their origins in people's beliefs over time, and in how people relate to and project those beliefs. As such the project area is an important cultural landscape, defined not so much in terms of its potential for archaeological sites that meet criteria for listing on State and National Registers, but as a place conducive to the development of the intimate, and sometimes enigmatic, relationships between the present and the past, and between people and the environment.

Acknowledgments

I wish to acknowledge Anita Fast Ph.D., Mr. Mark Strohmeier, and Onkwe Tasi for accompanying me to the Conant Parcel and freely discussing their observations, opinions, and interpretations with me. This article has its origins in a paper presented before the Massachusetts Archaeological Society and I appreciate the encouragement of Brona Simon, Barbara Luedtke, and Tonya Largy to put the paper in print. As always, the support of my colleagues at The Public Archaeology Laboratory, Inc. is sincerely acknowledged.

I would like to dedicate this article to my late father-in-law, Mark Hollis Tripp. He was a man of integrity, intelligence, and dignity. He was the most uncommon man I have ever known.

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NOTE ON USE OF HORSESHOE CRABS BY NATIVE AMERICANS

Philip Brady

Three publications provide information on the use of the horseshoe crab by local Native Americans. Henry Howe, a member and director of the Massachusetts Archaeological Society, writing in his book, *Prologue to New England*, reported that Samuel de Champlain:

... sailed across Casco Bay to make a landfall at the mouth of the Saco River ... and that some (the Almouchiquois) used the tail of the horseshoe crab, which they called the 'signoc,' as a point for their arrows (Howe 1943:101).

Also:

Here at Cape Cod Champlain again evidences his amusing fascination with the horseshoe crab ... In this place and along the whole coast from Quinibeque there are a great many siguenocs, which is a fish with a shell on its back like the tortoise ... The length of the tail varies according to its size. With the end of it these people point their arrows ... The largest specimen ... that I saw was a foot broad and a foot and a half long (Howe 1943:120).

Charles Willoughby, in *Antiquities of the New England Indians*, wrote:

Champlain saw the shells of the horse shoe used as hoes ... (Willoughby 1935:170).

Nancy Day in *The Horseshoe Crab*, noted:

Native Americans were familiar with the horseshoe crab and found many uses for it. Its tail made a good sharp spear tip. Its meat could be eaten. It made good bait for fishing. And its shell was useful, especially for bailing out wet canoes. Native Americans were also the first to discover that horseshoe crabs make an excellent fertilizer, or plant food (Day 1992:18).

She also noted that one scientist ate the meat of the crab and reported:

... there's not much of it ... and ... it doesn't taste as good as the meat of a blue crab (Day 1992:18).

Technically, the horseshoe crab is not a crab. It belongs to a large group of animals called arthropods, which includes insects, spiders, scorpions, and ticks. Its ancestors go back over 500 million years.

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In Memoriam: William A. Ritchie, 1903-1995

by Shirley Blancke

Dr. William A. Ritchie, foremost specialist in the archaeology of the Northeast of his generation, died in May, 1995, in Albany, New York, at the age of 92. His seminal work laid the foundations for the development of the discipline in this area.

Particularly well-known out of his over 165 publications are *The Archaeology of New York State* (first published in 1965, and reprinted most recently in 1994), and *The Archaeology of Martha's Vineyard: A Framework for the Prehistory of Southern New England* (1969). Three others which are still widely consulted are his *Aboriginal Settlement Patterns in the Northeast* (1973), *Typology and Nomenclature for New York Projectile Points* (1961, revised 1971), and *Pre-Iroquoian Pottery of New York State*, written with R.S. MacNeish (1949). These books in particular provided a basic cultural and chronological framework for the Northeast which presented a comprehensive view of the sequence of prehistoric cultures. His work became the norm from which northeastern scholars subsequently diverged in defining how the cultures of their areas differed in greater or lesser degree from those of New York.

It was Dr. Ritchie who coined the term "Archaic" for an early stage of cultural development in the Northeast. He interpreted artifacts as indicators of subsistence practices through which human cultures functioned as adaptive systems in the environment. This was possible because he was one of the first to recognize the importance of stratigraphy in

excavation technique to isolate and define cultural horizons in the 100 major sites he excavated throughout the Northeast.

William Ritchie was born on November 20, 1903, in Rochester, New York. His early interest and training in archaeology was fostered by the local museum, now the Rochester Museum and Science Center, where he worked first as a high school volunteer, and later advanced to assistant archaeologist, and eventually curator. During this time he received professional training culminating in a Ph.D. in anthropology from Columbia University (1944). He left Rochester in 1949 to become state archaeologist at the New York State Museum in Albany where he remained until his retirement in 1971.

Dr. Ritchie was a president of the Society for American Archaeology, and a fellow of the American Anthropological Association. He received many awards and citations for his work, including the Society for American Archaeology's highest honor, the Distinguished Service Award (1987).

Dr. Ritchie was well aware of environmental forces on human populations, and looked for evidence of them in evaluating human skeletal material and faunal remains from pits and middens. After retirement he refocused his environmental interests on issues of conservation, animal welfare, and environmental protection, receiving the Conservationist of the Year award from the Audubon Society (1989). He wished to be remembered as one who "loved the Earth and Nature, and was always kind to people and animals."

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